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Not just coronavirus—heat also poses a threat to public health this summer

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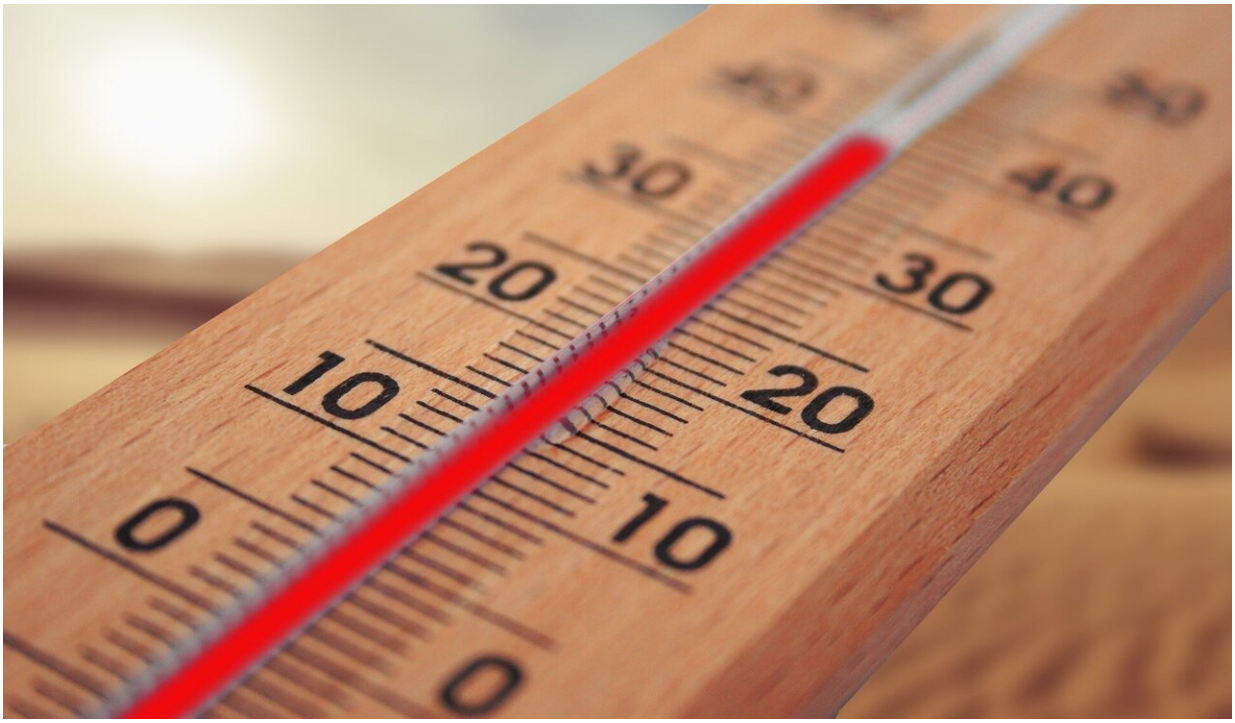

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The COVID-19 pandemic has forced us to reimagine our summers. In the past, urban parks were bursting with randomly distributed crowds of sun-lovers.

In the era of COVID-19, park-goers in places like Toronto's Trinity

Bellwoods Park are now neatly organized within small, white circles—a clever strategy to maintain adequate physical distance between social bubbles.

Although many Canadians welcome the warmer weather with outstretched arms and open-toe shoes, we must acknowledge another threat we face this summer: the heat.

July has seen record-breaking heat scorch the southern United States where coronavirus cases have been rising rapidly. Heat is also sweeping across Ontario and Québec, offering little relief at night. The outlook looks hot too: An immense heat dome is parked over North America, threatening to bring a long, intense heat wave through mid-July.

Summer weather: Friend and foe

While many eagerly anticipate the arrival of summer each year, it's important to recognize that heat can be dangerous. Of particular concern are heat waves—multi-day episodes of temperatures that are substantially hotter that what is normal for a community.

However, even single days of hot weather can cause a spectrum of illnesses including heat exhaustion and heat stroke—the latter of which can be fatal. In addition, heat can worsen existing chronic conditions such as heart and breathing problems.

How much of a threat is heat? Unlike other weather phenomena such as hurricanes and tornadoes, heat is a silent killer and its impact on deaths has proven challenging to estimate.

In the U.S., the Centers for Disease Control and Prevention estimates that an average of 658 people die due to heat each year. However, this estimate only includes deaths for which heat was listed as a cause on the

death certificate.

Because it can be hard to know whether someone's death was due to the heat, especially if heat contributed to a death from a chronic illness like heart disease, we believed that the true number of deaths due to heat in the U.S. could be much larger.

How many deaths does heat influence?

To answer this question, we conducted a study using a different method to count the number of additional deaths during periods of moderate and high heat in the U.S. We used statistical models to link daily temperatures across the U.S. with daily numbers of deaths between 1997 and 2006. This model allowed us to identify how many more deaths occurred on hotter days, regardless of the causes listed on the death certificate.

Our results indicated that heat contributed to approximately 5,600 deaths each year in the U.S. While our study only included two-thirds of the U.S. population, our estimate is still more than eight times higher than the CDC estimate. We also found that even moderately hot weather was associated with excess deaths—about 3,300 per year (with extreme heat contributing to the remaining 2,300 excess deaths per year).

Our study focused on the U.S., but hot weather threatens the health of Canadians as well. Notable heat waves have resulted in a large number of deaths in Canada. For example, 66 people died in a single heat wave in Montréal in 2018.

As the mercury soars, public health strategies like providing access to air-conditioned public spaces will be critical to keeping Canadians safe. However, the COVID-19 pandemic is likely to complicate our ability to respond to high heat this summer.

COVID-19 and heat

While some have hoped that the summertime heat and humidity would slow the spread of COVID-19, research from the University of Toronto has suggested that weather is not a significant factor, and that public health interventions like physical distancing have a far greater impact on slowing epidemic growth. These interventions are critical to controlling the virus, but may have downstream impacts on health, including increases in heat-related health risks.

For example, community cooling spaces have historically offered respite from high summertime heat for those without access to air conditioning, but many have closed or have restricted their access due to COVID-19.

Responding effectively to the pandemic requires us to limit social interactions, but persons who are socially isolated are at a greater risk of dying from heat. Long-term care homes, where large numbers of cases have been reported, may face compounding risks as many lack air conditioning.

What can be done

Continuing to adhere to public health guidelines to reduce the spread of COVID-19 remains essential, especially as communities begin to reopen parts of their economies. At the same time, keep in mind that heat can be dangerous and that the threat it poses may be worsened by the COVID-19 pandemic.

Greater awareness about the harmful effects of heat is a first step in protecting yourself and others from potential heat-related harms. There are several things you can do to protect yourself and others from heat, such as remaining hydrated and keeping your living space as cool as

possible. Calling or virtually checking on older relatives, neighbors and other individuals at an increased risk for heat-related illness also helps.

Finally, provinces should pay close attention to supporting communities that are particularly susceptible to heat, such as residents of long-term care homes and others without access to cool home environments.

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